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(54) A sporting garment

(57) A sporting garment such as a wet or dry suit, has a closely fitting opening (11, Fig 1), e.g. at the neck, wrist or ankle, defined by a band 12 of substantially resilient material having a channel 15 extending at least part of the way around the band. The channel is closed at one end and open at the other and receives an elongate adjustment band 17 secured at or adjacent the closed end and projecting through the said open end. The band 17 has releasable fastening means at or adjacent a free end 16 whereby it is fastenable in a plurality of different positions to adjust the size of the band within a certain range, or at least the pressure exerted on the wearer.

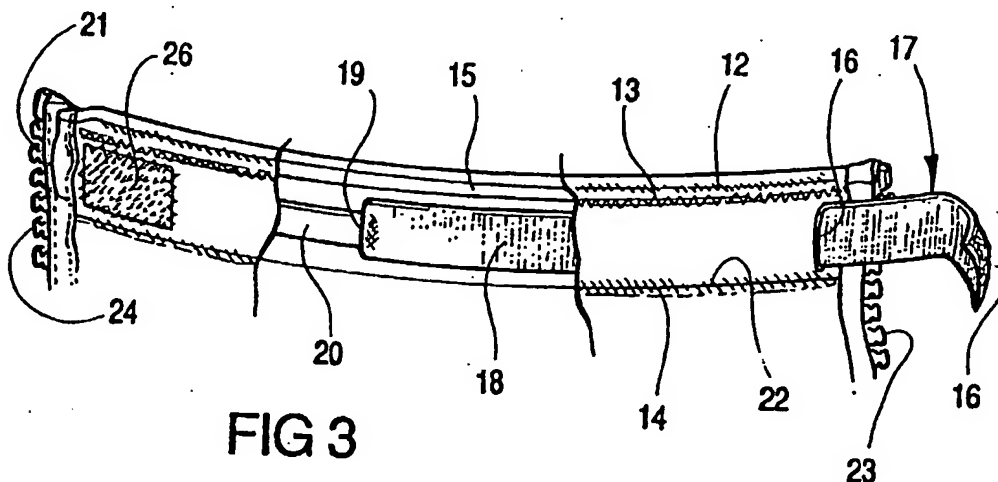
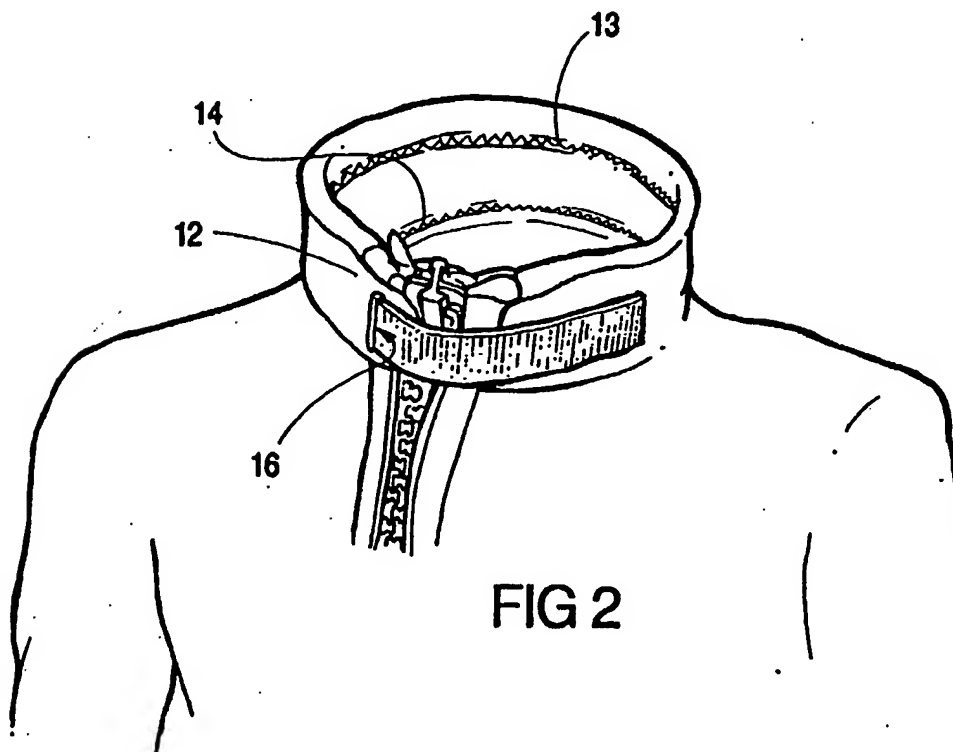
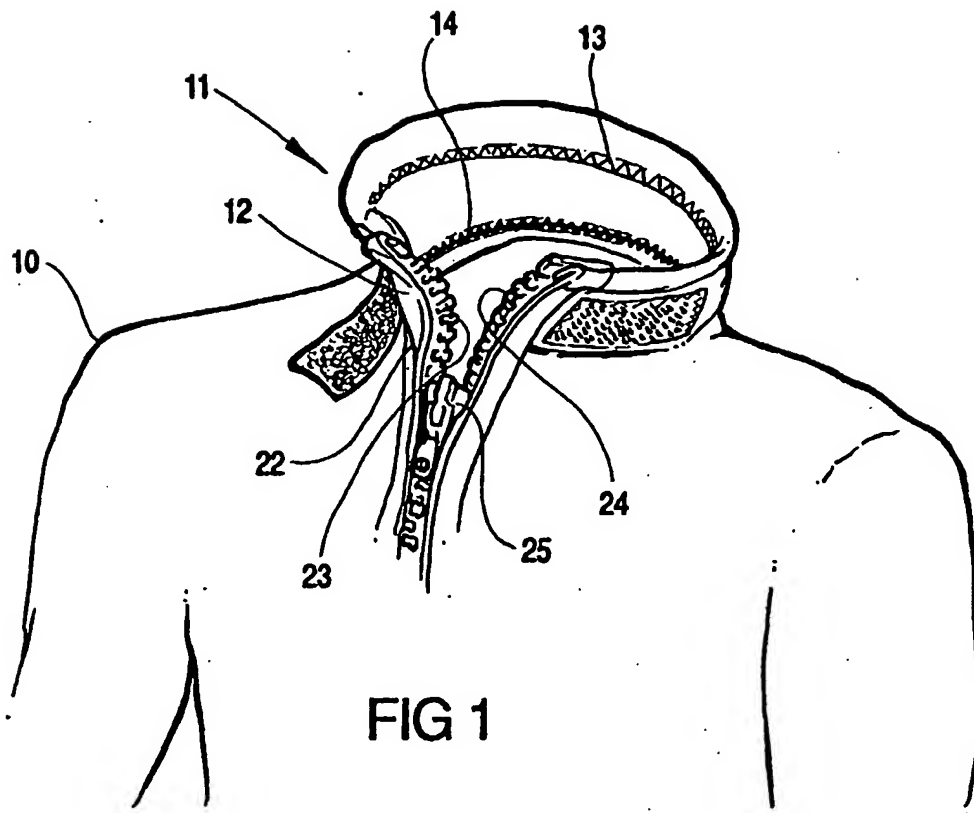
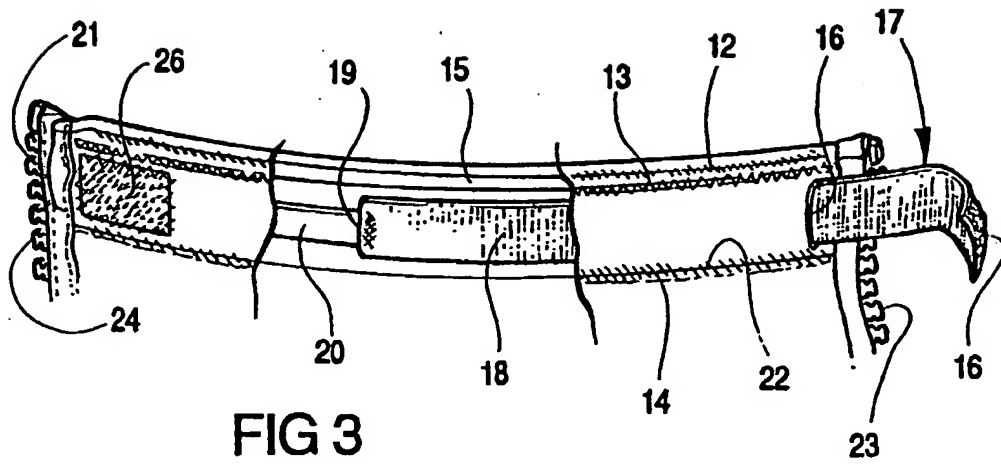


FIG 3

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A SPORTING GARMENT

The present invention relates to a sporting garment generally, and particularly, but not exclusively, to a
5 sporting garment having a relatively tight fit such as a wet suit or dry suit.

Sporting garments for outdoor use, especially for water sports or snow sports, are made in such a way that
10 those edges of the garment defining an opening through which a limb or a part of the body projects are shaped so as to fit closely to the body in order to maintain body warmth and, especially, to prevent the ingress of water.

15 Although such garments are carefully made taking into account the requirements for freedom of movement as well as those of protection against the elements, there is a further complication due to the fact that all individual wearers have different physical dimensions and also
20 different sensitivities to pressure. It is not sufficient, therefore, in order to provide, say, watertightness of a waterproof garment such as a wet suit, simply to elasticate the openings such as the cuffs, collar or neckband and leg openings since the pressure
25 exerted by such elasticated openings would be insufficient for people, even of the appropriate overall physical dimensions for the garment to be a reasonable fit, who may

have exceptionally narrow wrists, ankles or neck, whilst they would exert unacceptable pressure on the wrists, ankles or neck of a person having an unusual thickness in these regions. Furthermore, because some people are more sensitive than others to pressure, the force exerted by elasticated openings which would be entirely acceptable to one person may cause discomfort or even pain to another. It is in these days not possible for individual garments economically to be produced for individual wearers so that each garment must be expected to be able to fit a range of individual sizes.

The present invention seeks to provide a solution to this problem, making it possible for garments having a suitable adjustable fit to be produced for a range of different sizes, which will allow a watertight seal around an opening to be formed without exerting unnecessary or uncomfortable pressure, and will also be easy to adjust using only one hand so that rapid changes in adjustment can be made quickly and easily without requiring any complicated manipulations which may interfere with the wearer's activity.

According to the present invention, therefore, there is provided a sporting garment having a closely fitting opening defined by a band of substantially resilient material, having a channel extending at least part of the

way around the band defining the opening, closed at one end and open at the other with an elongate adjustment band housed in the channel, secured at or adjacent the closed end thereof, projecting through the said open end and
5 provided with releasable fastening means at or adjacent a free end, the releasable fastening means being fastenable in a plurality of different positions whereby to adjust the size of the band defining the opening, or at least the pressure exerted on the part of the wearer projecting
10 through the opening when the garment is in use, at least within a certain range.

The opening may be a neck opening defined by a collar band, a wrist opening in a sleeve defined by a cuff, or a
15 foot opening in a leg, defined by an ankle band.

In any case the said channel and the said elongate adjustment band both preferably extend substantially entirely around the opening-defining band of the garment.

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In a preferred embodiment of the invention the said elongate adjustment band is a flat strip-like element which can be housed conveniently within a relatively wide shallow channel without increasing the thickness of that
25 part of the garment formed with the opening beyond an unacceptable limit.

The garment of the present invention may be substantially wholly made from a substantially resilient material and will be described hereinbelow with particular reference to its application as a wet suit for surface water sports.

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Preferably the said elongate adjustment band is substantially inextensible.

Furthermore, it is preferred that the said releasable
10 fastening means at the free end of the band is a hook and loop or Velcro (RTM) fastener cooperating with a corresponding fixed fastener element secured to the opening-defining band in the vicinity of the open end of the channel. In embodiments in which the releasable
15 fastener is a hook and loop or Velcro fastener, it is preferred that the hooks of the fastener are secured to the opening-defining band, and the said substantially inextensible band is provided or formed with a plurality of the loops of the fastener. This may conventionally be
20 achieved by attachment, for example by stitching, of an elementary portion of fastener material provided with such hooks or such loops.

The said open end of the channel preferably opens onto the
25 outside of the garment such that the said free end of the said substantially inextensible band lies also on the outside of the garment.

Adjustment of the pressure or size of the opening can thus be achieved easily, using only one hand, by grasping the exposed free end of the substantially inextensible band, releasing it from the fastener by drawing it out of engagement, for example peeling back the cooperating elements, and applying a tension to the free end sufficient to create, by the wearer's subjective assessment, the appropriate pressure on the opening. This can be ensured by forming the said opening-defining band from a material offering sufficient stiffness to be self-supporting and sufficient friction between itself and the wearer to resist twisting as a tension is applied to the said substantially inextensible band.

15 In embodiments in which the opening-defining band is a collar, the said collar itself may have a releasable collar fastener operable separately from the releasable fastener of the elongate adjustment band. In other words, the collar may be formed in a conventional way as a horseshoe-shape element with means for closing the free ends of the horseshoe whereby completely to encircle the neck. A similar structure may, of course, be employed at cuffs and ankles.

25 The said releasable collar fastener (or cuff or ankle fastener) may be a sliding clasp fastener which also closes an opening in the body of the garment.

A garment formed as an embodiment of the present invention will now be more particularly described, by way of example, with reference to the accompanying drawings in which the garment is illustrated as a wet suit for surface water sports, and in which:

Figure 1 is a perspective view of an upper part of a wet suits for surface water sports showing the external appearance of the collar with the adjustable fastener of the present invention;

Figure 2 is a front view of the neckband in the closure position; and

Figure 3 is a cut away developed view from the outside of the collar band illustrated in Figures 1 and 2.

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Referring now to the drawings, the garment shown comprises the upper part of a wet suit for surface water sports which, as is known, are conventionally manufactured from a resilient neoprene rubber fabric which is substantially resilient in all directions.

The neck opening of the wet suit, generally indicated with the reference numeral 11 is constituted by an elongate opening-defining band 12 which in this embodiment is formed by two superimposed layers of material stitched in two parallel lines 13, 14 to define an elongate channel 15 within the interior of the collar band. The channel 15

has an opening 16 on the outside of the collar band 12 adjacent one end thereof, through which projects a free end portion 16 of an elongate adjustment band generally indicated 17. The adjustment band 17 comprises a

5 substantially inelastic adjustment band portion 18 secured at a junction 19 to a resilient adjustment band portion 20 the other end of which is secured, within the channel 15, to one or preferably both of the layers defining the band 12 at the end thereof remote from the opening 16, which is

10 identified with the reference numeral 21.

The band 12 is attached at its lower edge 22, in a conventional manner, to the shoulder yoke and front panel portions of the wet suit 10 and the opposite side portions

15 23, 24 of a sliding clasp fastener generally indicated 25 are secured to the ends of the band, in alignment with opposite joined edges of the front panels of the wet suit 10.

20 Within the channel 15 the elongate adjustment band 17 lies flat and generally parallel to the fabric layers defining the collar band 12 so as to add only an insignificant thickness thereto. The width of the band 17 is naturally less than that of the collar band 12 since it is located

25 within a channel therein, but is otherwise as wide as can conveniently be achieved without causing unnecessary frictional engagement of the edges of the band within the

sides of the channel. The length of the resilient adjustment band portion 20 is approximately one third of the overall developed length of the collar band 12 and in any case lies between one quarter and one half of this length. This ensures that the major portion of the adjustment band 17 is substantially inextensible and relatively stiff, providing reinforcement for the upstanding shape of the collar band, whilst the resilient adjustment band portion 20 permits a degree of tension in the adjustment band 17 to be maintained upon adjustment as will be described hereinbelow.

On the outside of the collar band 12 on the end remote from that having the channel opening 16, there is attached a fastening element 26, conveniently, as illustrated in the specific example, constituted by a plurality of resilient hooks of a hook-and-loop fastener sold under the trade mark Velcro. Correspondingly, the inner face of the substantially inextensible adjustment band portion 18, and at least the free end portion 16 thereof, is provided with a plurality of loops of a cooperative nature to form a Velcro fastening with the hook element 26.

In use of the garment 10, the sliding clasp fastener 25 is closed as the garment is donned, and by drawing with one hand on the free end portion 16 of the adjustment band 17 it is possible to apply a tension to the collar band 12

such as to effect a watertight seal with the wearer's neck, without applying undue or uncomfortable pressure thereto. If, during the activity engaged in whilst wearing the garment 10 the pressure becomes uncomfortable, or is discovered to be inadequate to maintain the desired degree of watertightness, it can be adjusted simply using one hand by peeling back the free end 16 of the adjustment band 17, applying a greater or lesser tension thereto and re-engaging the hook and loop fastener to maintain the selected tension via the resilient adjustment band portion 20. Such adjustment can be made quickly and easily, using only one hand, and therefore does not interfere with the activity in which the wearer is engaged. Similar such adjustable openings can be provided at wrists and ankles and, likewise, can be adjusted for a suitable balance between comfort and watertightness quickly and easily, and in each case using only one hand. Having the interior channel 15 within the collar band 12 has an aesthetic advantage in that the adjustment band is not visible over the majority of its length, and also serves to maintain it located in position so that there is no possibility of it becoming displaced from the collar as would occur in the case of an encircling adjustment band. Finally, the free end 16 of the adjustment band also serves to enclose the draw tag of the sliding clasp fastener which, therefore, maintains this secured against movement and possible loosening.

CLAIMS

1. A sporting garment having a closely fitting opening defined by a band of substantially resilient material
5 having a channel extending at least part of the way around the band defining the opening, closed at one end and open at the other with an elongate adjustment band housed in the channel, secured at or adjacent the closed end thereof, projecting through the said open end and provided
10 with releasable fastening means at or adjacent a free end, the releasable fastening means being fastenable in a plurality of different positions whereby to adjust the size of the band within a certain range, or at least the pressure exerted on the wearer.

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2. A sporting garment as claimed in Claim 1, in which the said channel and the said elongate adjustment band both extend substantially entirely around the opening-defining band of the garment.

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3. A sporting garment as claimed in Claim 1 or Claim 2, in which the said elongate adjustment band is a flat strip-like element.

25 4. A sporting garment as claimed in any of Claims 1 to 3, in which the garment is substantially wholly made from a substantially resilient material.

5. A sporting garment as claimed in any preceding Claim,
in which the said elongate adjustment band is
substantially inextensible.

5 6. A sporting garment as claimed in any preceding Claim,
in which the said releasable fastening means at the free
end of the band is a hook and loop or Velcro (RTM)
fastener cooperating with a corresponding fixed fastener
element secured to the opening-defining band in the
10 vicinity of the said open end of the channel.

7. A sporting garment as claimed in Claim 5, in which
the hooks of the hook and loop fastener are secured to the
opening-defining band and the said elongate adjustment
15 band is provided or formed with a plurality of the loops
of the fastener.

8. A sporting garment as claimed in any preceding Claim,
in which the said open end of the channel opens onto the
20 outside of the garment such that the said free end of the
said elongate adjustment band lies on the outside of the
garment.

9. A sporting garment as claimed in any preceding Claim,
25 in which the said elongate adjustment band comprises a
substantially inextensible adjustment band portion and
resilient adjustment band portion, the said two portions

being joined end to end.

10. A sporting garment as claimed in Claim 9, in which the said substantially inextensible adjustment band portion projects through the said opening in the channel and the said resilient adjustment band portion is fixedly secured to the channel at its end opposite that joined to the said substantially inextensible adjustment band portion.

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11. A sporting garment as claimed in Claim 9 or Claim 10, in which the length of the said resilient adjustment band portion, when relaxed lies between one quarter and one half of the circumferential length of the opening-defining band.

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12. A sporting garment as claimed in any preceding Claim, in which the said collar itself has a releasable collar fastener operable separately from the releasable fastener of the elongate adjustment band.

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13. A sporting garment as claimed in Claim 12, in which the releasable collar fastener is a sliding clasp fastener which also closes an opening in the body of the garment.

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14. A sporting garment as claimed in any preceding Claim, formed as a wet suit for surface water sports.

15. A sporting garment substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

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